

### Abstract

Sensors are described that may be provided in a medication pump. A magnetic sensor detects rotation of an element that is rotated by a motor, where a magnet covers a portion of the element. A light sensor may also be provided that detects if a cartridge is present in a cartridge chamber. A medication cartridge includes an opaque area at its open end for use with the light sensor. Methods of using these sensors to operate the pump area also described.